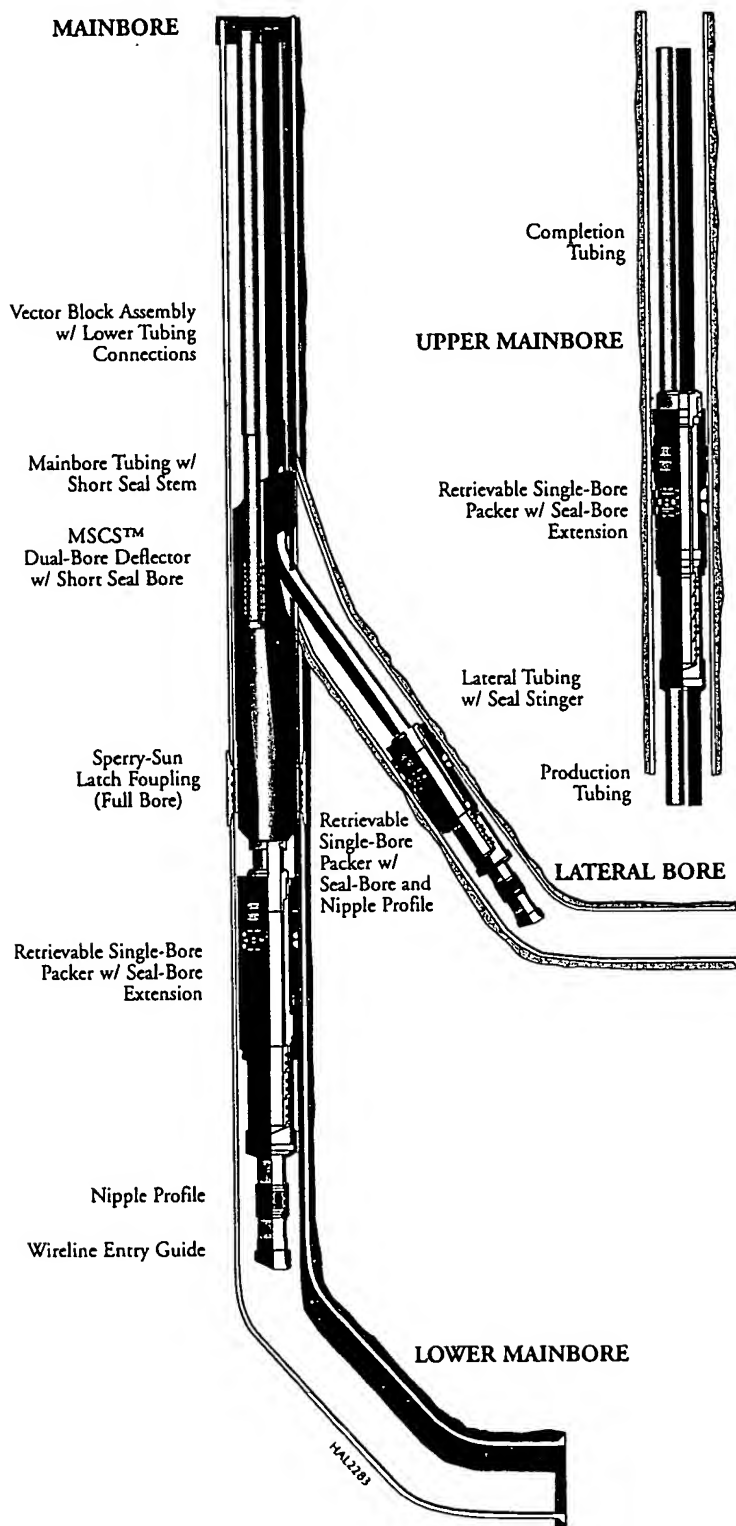


# Multilateral Services Profile

## MSCS® Multi-String Completion System

### BranchMaster™ Lateral Access Completion Systems



#### Application

The MSCS® completion system is specifically designed for multilateral wells that require complete junction pressure isolation. This system also allows re-entry capability to access the lateral(s) through the completion during the life of the well. Injection wells, gas wells, or those with zones or blocks with differing hydraulic regimes are prime candidates. This capability eliminates the requirement to pull the completion should access be required to the lateral for cleaning, stimulation, zonal isolation, or data acquisition. With the installation of a dual completion, production from each lateral is completely segregated up to the surface. The hydraulic integrity at the junction provides the capability to construct dual-purpose injector/producer wells. With the use of the optional vector block, a single-string completion can be installed to allow commingled production while maintaining selective access to either lateral of the junction.

#### Features

- Incremental completion system to convert level 3 and 4 multilateral junctions to level 5
- Dual completion option provides hydraulic isolation across the junctions
- Differential pressure ratings can be as high as 7,500 psi
- Single-string completions (commingled production/injection) use the optional vector block to maintain selective re-entry access and isolation capability for both lateral and mainbore

#### Benefits

- Tubing in both laterals is installed in a single run. Modular integration with level 3 and 4 systems in both new and re-entry applications
- Junction placement becomes less dependent on local fracture gradients, pore pressures, competence, etc.
- Junction integrity is not challenged when applied to gas and high-pressure injector wells
- Dual-flow paths allow injection and production or segregated production from different reservoir layers
- Systems can be stacked in series

# Multilateral Services *Specifications*

## MSCS® Multi-String Completion System

### BranchMaster™ Lateral Access Completion Systems



#### Typical Installation Sequence

- Set the LRW™ lateral re-entry whipstock in the multilateral junction.
- Run in hole and set the lateral seal-bore packer in the lateral bore.
- Retrieve the LRW™ re-entry whipstock.
- Run in hole with MSCS® dual-bore deflector, including the mainbore tailpipe and lower packer assembly, and set in the junction.
- Run in hole with the dual-tubing strings. The lateral string and seal assembly deflects into the lateral bore and stings into the lateral packer while the mainbore string and seal assembly strings into the DBD seal bore. Set upper dual-string packer assembly.
- Install upper completion and flow the well.

#### MSCS® System Specifications

TAML Level 5 Completion		
System casing size	7 in. 177 mm	9-5/8 in. 244.5 mm
Casing weight	23-29 lb/ft	43-47 lb/ft
Lateral liner size	4-1/2 in. 114.3 mm	7 in. 177.8 mm
System size tubing size*	7 in. x 3-1/2 in. x 2-3/8 in. x 2-1/8 in.	9-5/8 in. x 4-1/2 in. x 3-1/2 in. x 2-7/8 in. 9-5/8 in. x 4-1/2 in. x 3-1/2 in. x 3-1/2 in.
Re-entry	Through-tubing re-entry to lateral using wireline or coiled tubing Through-tubing re-entry to lower mainbore using wireline or coiled tubing	
Isolation	Full isolation of lateral or mainbore using TPL through-tubing pressure isolation sleeve (lateral isolation) or bridge plug (mainbore isolation)	

\*Casing size x upper tubing size x lower mainbore tubing size x lateral tubing size

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